EUNICE AND *PALOLA* (EUNICIDAE: POLYCHAETA) FROM THE EASTERN BRAZILIAN COAST (13°00′–22°30′S)

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ABSTRACT

Seventeen species of Eunicidae belonging to the genera *Eunice* and *Palola* were found on the eastern Brazilian Coast. Among them are two new species: *Eunice marcusi* and *Palola brasiliensis*. The coast line is dominated by calcareous bottoms and its fauna is one of the poorest known in the western Atlantic.

The eastern Brazilian coast polychaete fauna is among the least known in the western Atlantic. The coast (ca 13°00′–22°30′S) is dominated by biogenic calcareous bottoms of living and dead algae, coral reefs and other biodetritic fragments (Lana, 1996). This substrate is suitable for reef-boring organisms, such as Eunicidae which is the dominant polychaete family in the area. Despite their large body size and the large number of characters, eunicid taxonomy is quite problematic. Several original descriptions were rather brief, leading to a great number of indeterminable species. Fauchald (1992a,b) reviewed the genera *Eunice* and *Palola* and redescribed them in a more realistic framework that allowed for the identification of many rare species previously reported as synonyms of 'well known' species. Hence, in this study, of the total of 17 species recorded, two are new: *Eunice marcusi* and *Palola brasiliensis*, and many are known only from original description or very few samples.

Materials and Methods

Material used for this study was collected by oceanographic surveys using the vessels: HV Antares (Diretoria de Hidrografía e Navegação—Brazilian Navy) and SV Astro-Garoupa (PETROBRÁS). Location and depth of sampling stations are presented in Tables 1, 2 and 3. Sampling gear included Van Veen grabs, dredges and beam trawls. Shallow water samples (intertidal to 10 m) were collected by SCUBA. All samples were sieved (0.5 mm mesh-size) on board ship and fixed in 10% buffered formalin. All material, including holotypes and paratypes, were deposited at the Departamento de Zoologia, Instituto de Biologia, Universidade Federal do Rio de Janeiro (IBUFRJ).

Systematics

Eunice cariboea Grube, 1856

Eunice cariboea Grube, 1856: 57; Fauchald, 1992a: 98–102, figs. 29g–q.
Eunice (*Nicidion*) *cariboea* Hartman, 1944: 123–124, pl. 7: figs. 157–163, pl. 8: fig. 178; Nonato and Luna, 1970: 83, fig. 59.
Nicidion incerta Hansen, 1882: 8, pl. 2: figs. 19–21.

Material Examined.—sta. 25BT, 1 spec.; sta. 35VV, 1 spec.; sta. 10C, 3 spec.; sta. 11C, 2 spec.; sta. 15C, 2 spec.; sta. 16C, 1 spec.; sta. 21C, 3 spec.; sta. 29 C, 3 spec.; sta. 32C,

Table 1. Station list of the Bacia de Campos Program.

Stations	Depth (m)	Longitude	Latitude	Sediment
St. 3W	20	21° 20'42"S	40° 35'42"W	biodetritic calcareous
St. 10W	40	21° 41'48"S	40° 20'42"W	medium sand
St. 12W	70	21° 42'50"S	40° 11'06"W	biodetritic calcareous
St. 15W	25	22° 10'40"S	41° 39'15"W	fine sand
St. 23W	15	22° 22'03"S	41° 40'48"W	coarse sand
St. 25W	30	22° 23'20"S	41° 18'50"W	fine sand with biodetritic calcareous
St. 28W	60	22° 24'32"S	40° 43'47"W	biodetritic calcareous
St. 30W	18	22° 35'36"S	41° 55'06"W	coarse sand with biodetritic calcareous
St. 31W	150	22° 54'53"S	40° 47'58"W	biodetritic calcareous
St. 32W	40	22° 40'47"S	41° 43'57"W	very fine sand
St. 50W	135	23° 37'42"S	41° 23'58"W	biodetritic calcareous
St. 2S	27	21° 21'02"S	40° 42'45"W	medium sand
St. 3S	29	21° 21'08"S	40° 35'01"W	biodetritic calcareous
St. 9S	23	21° 40'02"S	40° 32'46"W	coarse sand
St. 10S	44	21° 41'25"S	40° 20'46"W	medium sand
St. 15S	30	22° 10'34"S	40° 58'55"W	coarse sand
St. 21S	98	22° 06'52"S	40° 05'01"W	biodetritic calcareous
St. 25S	38	22° 23'43"S	41° 19'08"W	fine sand with biodetritic calcareous
St. 27S	48	22° 24'05"S	41° 05'08"W	biodetritic calcareous
St. 28S	69	22° 25'55"S	40° 42'44"W	biodetritic calcareous
St. 29S	106	22° 25'50"S	40° 35'27"W	biodetritic calcareous
St. 30S	20	22° 35'47"S	41° 35'01"W	coarse sand with biodetritic calcareous
St. 32S	47	22° 40'35"S	41° 43'21"W	medium sand with biodetritic calcareous
St. 35S	71	22° 55'22"S	41° 13'15"W	biodetritic calcareous
St. 37S	110	23° 03'44"S	40° 55'47"W	biodetritic calcareous
St. 43S	98	23° 16'15"S	41° 15'15"W	biodetritic calcareous

1 spec.; sta. 15 W, 1 spec.; sta. 30W, 1 spec.; sta. 32W, 3 spec.; sta. 2S, 1 spec.; Abrolhos-10 m, 3 spec.; Abrolhos/Siriba-3 m, 10 spec.; Abrolhos/Redonda-intertidal, 6 spec.

Remarks.—The start of the subacicular hooks in part of this material differs from that reported previuosly. They begin from setiger 25 to up to setiger 48, showing a greater variation (26 to 32) than observed by Fauchald (1992a). The only abranchiate species whose subacicular hooks appear this far posteriorly is *E. imogena*, also described from the eastern Brazilian coast by Monro (1924), which has hooks beginning after setiger 50. All other characters are very similar in all specimens analyzed, including the inflated body of the anterior region (setigers 9–10), the color pattern and antennal size and width.

Distribution on the Brazilian Coast.—Rio de Janeiro, Espírito Santo, Bahia, Sergipe and Alagoas States, from intertidal to 105 m, associated with calcareous algae and sand bottoms.

Eunice donathi Carrera-Parra and Salazar-Vallejo, 1998

Eunice donathi Carrera-Parra and Salazar-Vallejo, 1998: 150, figs. 1f–k.

Material Examined.—sta. 8C, 1 spec.; sta. 18C, 3 spec.; sta. 24C, 2 spec.; sta. 29C, 4 spec.; sta. 33C, 1 spec.; sta. 35C, 1 spec.; sta. 3S, 1 spec.

Table 2. Station list of the REVIZEE Program and locations.

Stations	Depth (m)	Longitude	Latitude	Sediment
St. 3BT	82	22° 52'42"S	41° 09'15"W	sand with biodetritic calcareous
St. 21BT	56	20° 38'00"S	40° 01'00"W	silt with biodetritic calcareous
St. 25BT	45	19° 59'54"S	39° 54'09"W	biodetritic calcareous
St. 2D	82	22° 53'16"S	41° 09'15"W	mud
St. 3D	82	22° 52'40"S	41° 09'15"W	sand with biodetritic calcareous
St. 6D	60	22° 18'01"S	40° 48'50"W	sand with biodetritic calcareous
St. 7D	60	22° 19'58"S	40° 50'54"W	sand with biodetritic calcareous
St. 23D	37	20° 21'17"S	40° 05'49"W	calcareous algae
St. 32D	22	18° 52'28"S	39° 35'25"W	sand with biodetritic calcareous
St. 39D	90	19° 28'33"S	38° 22'28"W	calcareous mud
St. 21VV	27	28° 38'14"S	40° 01'18"W	calcareous mud
St. 33VV	28	18° 53'16"S	39° 13'52"W	biodedritic calcareous
St. 35VV	25	18° 52'00"S	38° 58'00"W	biodetritic calcareous
St. 2C	50	13° 38'26"S	38° 45'40"W	biodedritic calcareous
St. 5C	50	15° 34'11"S	38° 51'36"W	biodetritic calcareous
St. 7C	58	16° 19'55"S	38° 14'39"W	sand with biodetritic calcareous
St. 8C	50	17° 34'21"S	38° 25'21"W	biodetritic calcareous
St. 10C	50	17° 05'54"S	36° 45'08"W	biodetritic calcareous
St. 11C	50	17° 03'59"S	36° 48'28"W	calcareous algae
St. 12C	50	17° 02'24"S	37° 36'26"W	calcareous algae
St. 13C	40	16° 47'14"S	38° 41'33"W	calcareous algae
St. 14C	66	17° 47'49"S	35° 52'50"W	calcareous algae
St. 15C	60	18° 01'22"S	35° 53'28"W	calcareous algae
St. 16C	53	18° 01'24"S	37° 21'55"W	calcareous algae
St. 17C	55	18° 34'00"S	38° 04'00"W	biodetritic calcareous
St. 18C	65	18° 35'37"S	37° 54'45"W	biodetritic calcareous
St. 20C	67	19° 16'08"S	38° 00'54"W	biodetritic calcareous
St. 21C	55	20° 42'21"S	35° 27'25"W	calcareous algae
St. 22C	110	20° 36'13"S	35° 51'25"W	calcareous algae
St. 24C	62	20° 21'03"S	36° 38'14"W	calcareous algae
St. 25C	65	19° 31'11"S	38° 46'06"W	calcareous algae
St. 27C	60	19° 45'36"S	39° 31'36"W	calcareous algae
St. 28C	54	19° 48'47"S	37° 56'33"W	calcareous algae
St. 29C	58	19° 48'01"S	37° 46'22"W	calcareous algae
St. 30C	50	28° 08'46"S	37° 29'06"W	biodetritic calcareous
St. 32C	54	20° 40'24"S	37° 42'37"W	calcareous algae
St. 33C	55	20° 35'03"S	38° 04'55"W	calcareous algae
St. 34C	55	26° 46'02"S	40° 05'59"W	calcareous algae
St. 35C	55	20° 52'00"S	40° 10'00"W	calcareous algae
St. 36C	52	21° 31'00"S	40° 18'00"W	calcareous algae
St. 37C	60	22° 22'10"S	37° 35'31"W	calcareous algae
St. 44C	65	20° 51'24"S	33° 38'34"W	calcareous algae
St. 45C	125	20° 57'05"S	34° 00'20"W	calcareous algae
St. 46C	108	20° 40'34"S	34° 35'22"W	sand with biodetritic calcareous
St. 47C	60	20° 36'51"S	34° 53'39"W	calcareous algae

Table 3. Direct samplings locations in Abrolhos Archipelago.

Location	Depth (m)	Longitude	Latitude	Sediment
Siriba Island	3	17° 58'07"S	38° 42' 46"W	coral reef debris
Redonda Island	0–3	17° 57'57"S	38° 42'46"W	under stones
Coral reef	10	17° 58'S	38° 40'W	coral reef

Description.—Only anterior fragments 2.5–4 mm wide including setae, 21 to 73 mm long and up to 166 setigers were available. Prostomium as long as peristomium. Body reddish with several white spots. Peristomial ring less colored. Setigers 4 and 5 (in one specimen also setiger 6) with a white crossbar. Antennae smooth, outer lateral antennae (AI) to the middle of first peristomial ring, inner lateral antennae (AII) to setigers 1-4 and unpaired median antenna (AIII) to setigers 4–7. Eyes posterior to AI and lateral to AII. Peristomial cirri ovate and short not reaching the margin of the first peristomial segment. Mandibles black with white borders. Maxillary formula: Mx I: 1+1, Mx II: 3+3(4), Mx III: 3(4)+0, Mx IV: 3(4)+6(7), Mx V: 1+1. Left Mx III and IV in a distal arc. Ventral cirri short, swollen basely after setiger 5 or 6. Branchiae begin from setigers 24–31, present to the end of fragments. Normally with one filament, but one specimen with two filaments on setiger 26 and three in setiger 34. Limbate, pectinate and bidentate compound falcigers present. Pectinate slightly heterodont with ca 11 teeth. Single black, unidentate subacicular hooks starting in setigers 26 to 31.

Remarks.—The material studied presents some differences from the original description of Carrera-Parra and Salazar-Vallejo (1998). These differences were related mainly to the start of branchiae (24 to 31 in our material vs 22 in the original description), start of subacicular hooks (26 to 31 vs 23) and number of branchial filaments (1 to 3 vs 2). Miura (1986), Orensanz (1990) and Fauchald (1991) discussed how the start of the subacicular hooks, branchiae and number of branchial filaments depend on the body size. Considering that the original description was based on just one specimen, the observed differences could be due to ontogenetic variation of these characters or on population variability. The color pattern is very similar to another fuscus-unidentate species, *E. sonorae* Fauchald, 1970, but this species has articulate ceratostyles, 6 branchial filaments and antennae much shorter than those observed in *E. donathi*.

Distribution on the Brazilian Coast.—*E. donathi* was known only from the type locality (Quintana Roo, Mexico in the northwestern Caribbean Sea). The distribution is expanded to the Brazilian coast (Bahia, Espírito Santo and Rio de Janeiro States) in calcareous algae bottoms between 20 and 62 m.

Eunice cf. *edwinlinkae* Carrera-Parra and Salazar-Vallejo, 1998

Eunice edwinlinkae Carrera-Parra and Salazar-Vallejo, 1998: 151, figs. 2A–F

Material Examined.—sta. 13C, 1 spec.; sta. 50W, 1 spec.

Remarks.—*E. edwinlinkae* belongs to the group of species with flavus-tridentate hooks and articulate dorsal cirri. It differs from the other species of this group in having very long antennae, bidentate compound falcigers; in having dorsal cirri much longer than branchiae and in having up to three branchial filaments. The antennal lengths of the stud-

ied material varies from the original description, AI to setiger 3 versus setiger 4, AII to setiger 13 vs setiger 21 and AIII to setiger 26 vs setiger 34.

Distribution on the Brazilian Coast.—E. edwinlinkae was known only from the type locality in Quintana Roo, Mexico. The distribution is expanded to the Brazilian coast, between the states of Bahia and Rio de Janeiro, in calcareous algae and biodetritic bottoms between 40 and 135 m.

Eunice filamentosa Grube, 1856

Eunice filamentosa Grube, 1856: 56; Luna, 1980: 175–176; Fauchald, 1992a: 138–140, figs. 45a–g.
?*Eunice filamentosa* Rullier and Amoureux, 1979: 173.

Material Examined.—sta. 6D, 2 spec.; sta. 7D, 2 spec.; sta. 9S, 2 spec.; sta. 15S, 2 spec.; sta. 27S, 3 spec.; sta. 32S, 3 spec.; Abrolhos Archipelago – 10 m, 1 spec.

Distribution on the Brazilian Coast.—Widely distributed on the coast from São Paulo to Ceará States, intertidal to 72 m in calcareous algae and sand bottoms.

Eunice fucata Ehlers, 1887

Eunice fucata Ehlers, 1887: 91–93, pl. 25: figs. 8–20
Staurocephalus gregaricus Mayer, 1900: 1.
Mayeria gregaricus Verril, 1900: 650

Material Examined.—sta. 10C, 1 spec.; sta. 11C, 3 spec.; sta. 14C, 3 spec.; sta. 22C, 3 spec.; sta. 47C, 1 spec.; sta. 3W, 2 spec.; sta. 3S, 2 spec.; Abrolhos/Siriba-3 m, 1 spec.

Remarks.—Three complete specimens, 6.5–7.5 mm wide, 120–124 mm long, 219–233 setigers. Body reddish with many discolored dorsal patches. Single unidentate subacicular hooks starting between setigers 32 to 35, normally light honey-colored. Even though Fauchald (1992a) remarked that *E. fucata* has unidentate subacicular hooks with light to medium brown cores and clear sheaths, the species was included in the fuscus-unidentate group (Fauchald, 1992a; Carrera-Parra and Salazar-Vallejo, 1998). *E. schemacephala* Schmarda (1861), considered indeterminable by Fauchald (1992a), resembles *E. fucata* but differs in having black subacicular hooks starting at setiger 40 and branchiae with a maximum of 8 filaments (Hartman, 1944; Day, 1967; Ibarzabal, 1989). Since the start of subacicular hooks and number of branchial filaments could be regarded as ontogenetic variation, the color of the subacicular hooks seems to be the best character to distinguish between the species.

Distribution on the Brazilian Coast.—E. fucata was described from Florida and is distributed in Caribbean waters where it is known as the Atlantic palolo. The distribution is expanded to the Brazilian coast (Bahia, Espírito Santo and Rio de Janeiro States) under stones, associated with calcareous algae from intertidal to 110 m.

Eunice marcusi new species
(Fig. 1A–F)

?*Leodice* sp. (*floridana* Pourtalès?) Treadwell, 1921: 33–34, figs. 77–84.

Material Examined.—sta. 3BT, 11 spec.; sta. 3W, 2 spec.; sta. 3S, 5 spec.; sta. 10S, 2 spec.

Description.—Holotype (IBUFRJ-0001) complete, 6 mm wide, 66 mm long, 121 setigers. Paratypes (IBUFRJ), only anterior fragments, 2–6 mm wide, 14–74 mm long, 14–110 setigers; one specimen a ripe female. Prostomium much shorter than peristomium, appearing to be biarticulate with an oblique division (Fig. 1A). Median sulcus deep, visible dorsally and ventrally. Eyes located between AI and AII. Antennae with moniliform articulations which become drop-shaped distally, AIII with 6 to 16 articulations. AI to the middle of first peristomial ring-setiger 2, AII to setigers 2–4, AIII to setigers 4–7. Ceratophores ring-shaped. Peristomial cirri articulate with great size variation reaching, at maximum length, the front of prostomium. First peristomial ring three to four times longer than the second and with a distinct lower lip. Separation between rings distinct dorsally and ventrally. Maxillary formula: Mx I: 1+1, Mx II: 4+4, Mx III: 6(7)+0, Mx IV: 3(5)+8, Mx V: 1+1(2), Mx VI: 1+1. Left Mx III and IV in a distal arc. Mandibles (Fig. 1B) well calcified, winged shaped with pointed external teeth. Branchiae palmate, shorter than dorsal cirrus (Fig. 1C), begin at setiger 4 (5 in only one specimen), continuing to setiger 110 (112). First branchiae with one filament; maximum 3 to 4 filaments between setigers 6(9) to 17(52) and decreasing to two and one filament toward posterior end. Last five branchiae smaller (Fig. 1D) and button shaped. Two smaller forms (probably young) with only one branchial filament. Dorsal cirri moniliform tapering distally. Ventral cirrus with swollen bases from setiger 7 to 38(42). Limbate setae slender marginally smooth, pectinate setae heterodont and compound falcigers bidentate (Fig. 1E) with teeth of similar size. Black acicula paired, the last 30 setigers with one of them very tiny which disap-

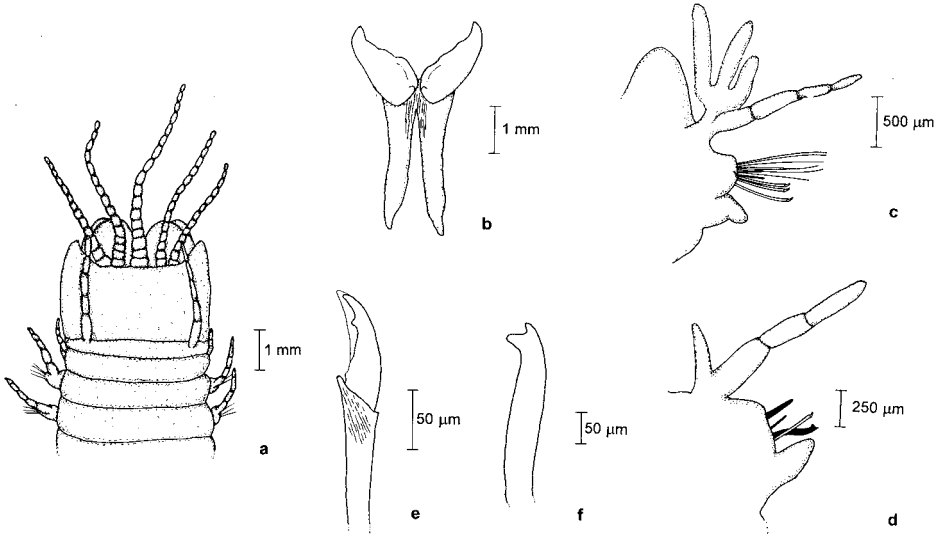

Figure 1. *Eunice marcusi* sp. nov.: a, anterior region; b, mandible; c, parapodium 22; d, parapodium 110; e, compound falciger, anterior setiger; f, subacicular hook.

pears in the last 9 setigers. Subacicular hooks black and bidentate (Fig. 1F) starting in setigers 19 (26) to the end of the body, one per setiger. One pair of anal cirri with up to 12 articulations.

Remarks.—The species belongs to B-2 group of Fauchald (1970), fuscus-bidentate with branchiae beginning anterior to setiger 10 and continuing beyond setiger 100. It is close to *E. dubitata*, differing by the ending of the most anterior branchiae and the relative width of the first antennae. Furthermore, in *E. marcusi* sp. nov. the prostomium has a distinct oblique division, a character shared with *E. aphroditois* (Pallas, 1788), *E. scombrinis* Quatrefages, 1866, *E. kinbergi* Ehlers, 1868 and *E. sebastiani* Nonato, 1965. Of these species only *E. kinbergi* has articulated antennae, but with well developed branchiae (up to 22 filaments) and subacicular hooks starting from setigers 123–135. Treadwells description of *Leodice* sp. (*floridana* Pourtalès) is very similar to our material, including the lower number of branchial filaments and articulated anal cirri, which are the main differences between his material and *E. floridana* (Pourtalès, 1867).

Distribution on the Brazilian Coast.—Rio de Janeiro and Espírito Santo States, between 20 and 44 m in calcareous algae and medium sand bottoms.

Etymology.—The species is named for the great zoologist Ernest Marcus, who dedicated almost all his life to the study of Brazilian invertebrate fauna and was responsible for a whole generation of invertebrate zoologists in Brazil.

Type locality.—Northern coast of Rio de Janeiro, off Cabo de São Tomé (21°41′25″S, 40°20′46″W), 44 m.

Eunice multicylindri Shisko, 1981

Eunice multicylindri Shisko, 1981: 971–973, figs. 2a–d; Fauchald, 1992a: 227–228, figs. 75f–i.

Material Examined.—sta. 2D, 5 spec.; sta. 7D, 3 spec.; sta. 5C, 1specimen; sta. 17C, 1 spec.; sta. 18C, 2 spec.; sta. 3S, 8 spec.; sta. 9S, 1 spec.; sta. 10S, 6 spec.; sta. 35S, 1 spec.

Remarks.—*E. multicylindri* is closely related to *E. unifrons* in having antennae with cylindrical articulations, bidentate compound falcigers and single subacicular hooks. Differences between them are observed in the peristomial cirri (articulated and tapering, rather than smooth and digitated as in *E. unifrons*) and in the disposition of the antennae (AIII isolated by a gap in the former rather than AI isolated by a gap in the latter).

Distribution on the Brazilian Coast.—This is the first record for the Brazilian coast, from the state of Rio de Janeiro to Bahia, between 20 and 60 m, in biodetritic, medium sand and coarse sand bottoms. Distribution extended from Southern California to Brazil.

Eunice mutilata Webster, 1884

Eunice mutilata Webster, 1884: 315–316, pl. 9: figs. 36–40; Hartman, 1944: 113–114, pl. 6: figs. 140–141; Fauchald, 1992a: 232–233
Leodice mutilata Treadwell, 1921:30–33, pl. 3: figs. 5–8

Material Examined.—sta. 10C, 1 spec.; sta. 22C, 2 spec.

Remarks.—The 3 specimens studied have paired acicula on the anterior part of the body and some of the compound falcigers are marginally serrated, characters only found in the Treadwell (1921) description.

Distribution on the Brazilian Coast.—Espírito Santo and Bahia from 50 to 110 m associated to calcareous algae.

Eunice cf. *nicidioformis* Treadwell, 1906

Eunice nicidioformis Treadwell, 1906: 1169, figs. 49–51; Fauchald, 1992a: 237–238, figs. 79f–m

Material Examined.—sta. 37S, 1 spec.

Remarks.—The single specimen studied is a fragment with only 40 setigers (length, 20 mm). It was not possible to see all characters, such as the end of the branchial region and the unusual vascularized sleeve which surrounds the base of the notopodial cirri between setigers 40–50. The large size of the first articulation of the antennae, which extends through the third setiger on AIII, and subacicular hooks appearing on setiger 31 makes this specimen different from the Fauchald (1992a) description. Since Fauchald (1992a) redescribed types from Hawaii (Pacific Ocean), the identification must be considered highly questionable.

Distribution on the Brazilian Coast.—Rio de Janeiro State at 60 m associated to calcareous algae.

Eunice ornata Andrews, 1891

Eunice ornata Andrews, 1891: 284–285, pl. 13: figs. 6–13; Fauchald, 1992a: 245–246, figs. 81f–o.
Eunice rubra Nonato and Luna, 1970: 81. [not *E. rubra* Grube, 1856]

Material Examined.—sta. 3D, 2 spec.; sta. 6D, 1 spec.; sta. 25AV, 2 spec.; sta. 39D, 5 spec.; sta. 7C, 2 spec.; sta. 16C, 1 spec.; sta. 27C, 1 spec.; sta. 28C, 3 spec.; sta. 29C, 1 spec.; sta. 2W, 2 spec.; sta. 3W, 5 spec.; sta. 10W, 2 spec.; sta. 3S, 4 spec.; sta. 10S, 18 spec.; sta. 25S, 12 spec.; sta. 28S, 1 spec.; sta. 30S, 2 spec.; sta. 43S, 4 spec.

Remarks.—According to Fauchald (1992a), The unusual structure of the median and posterior acicula and the change from between isodont pectinate setae in anterior setigers to heterodont pectinate setae in posterior setigers is characteristic of *E. ornata*. Differences between the original description and this material were observed. The branchial filaments were fewer in number, eyes distinct and antennae, in some cases, not distinctly moniliform.

Distribution on the Brazilian Coast.—Rio de Janeiro, Espírito Santo, Bahia, Sergipe and Alagoas between 20 and 100 m in calcareous algae and medium sand bottoms.

Eunice roussaei Quatrefages, 1866

Eunice roussaei Quatrefages, 1866: 309–311, pl. 10: fig. 1–4; Fauchald, 1992a: 288, fig. 97.
Eunice gigantea Cuvier 1830: 200

Material Examined.—sta. 23W, 1 spec.

Distribution on the Brazilian Coast.—Rio de Janeiro State at 15 m in coarse sand.

Eunice stigmatura (Verrill, 1900)

Leodice stigmatura Verrill, 1900: 641–643; Treadwell, 1921: 20–22, figs. 31-40, pl. 1: figs. 10–13.
Eunice vittata Hartman, 1942: 9 [in part, not *Nereis vittata* Chiaje, 1829]
Eunice stigmatura Fauchald, 1992a: 311–313, figs. 22,23,46,48,106.

Material Examined.—sta. 27C, 4 spec.; sta. 29C, 1 spec.; sta. 34C, 1 spec.; sta. 12W, 2 spec.; sta.21S, 2 spec.; sta. 35S, 2 spec.; sta. 43S, 1 spec.

Remarks.—*E. stigmatura* has been considered a synonymous of *E. vittata*. The branchial distribution is however different. *E. stigmatura* has branchiae to near the posterior end and *E. vittata* branchiae do not extend that far.

Distribution on the Brazilian Coast.—Rio de Janeiro and Espírito Santo States, in biodetritic and sand bottoms between 58 and 100 m.

Eunice thomasiana Augener, 1922
(Fig. 2A–D)

Eunice thomasiana Augener, 1922: 45; Fauchald, 1992a: 317, figs. 108 a–j, tables 24,25

Material Examined.—sta. 25AV, 3 spec.; sta. 23D, 12 spec.; sta. 33VV, 2 spec.; sta. 11C, 2 spec.; sta. 13C, 1 spec.; sta. 14C, 2 spec.; sta. 15C, 3 spec.; sta. 16C, 2 spec.; sta. 17C, 1 spec.; sta. 20C, 2 spec.; sta. 24C, 4 spec.; sta. 29C, 2 spec.; sta. 30C, 1 spec.; sta. 32C, 1 spec.; sta. 33C, 3 spec.; sta. 36C, 2 spec.

Description.—Of the 43 specimens studied only 9 were complete, 2.5–4.5 mm wide with setae, 41–73 mm long with 79–115 setigers. Prostomium shorter than peristomium. Setigers 4 with a white crossbar in most specimens, which extends anteriorly through setiger 1 (Fig. 2A). Antennae evenly spaced in semicircle, length variable, AI to the middle of first peristomial ring-setiger 5, AII to setiger 1–10, AIII to setiger 2–8. Ceratostyles slender and moniliform, increasing in length from AI to AIII (in some specimens AII and AIII are similar). Ceratophores ring shaped. Eyes behind AI. Separation between peristomial segments visible dorsally and ventrally, peristomial cirri articulated extending to the anterior border of the first peristomial segment. Mandibles white. Ventral cirri swollen basely from setigers 6 through setiger 21–30. Notopodial cirri digitiform, articulated, brown crossbars present on articulations. Branchiae palmate from setigers 4 (in two specimens from setigers 3 and 5) to setiger 39–100. Branchiae single filaments; maximum of 4 filaments (in 4 specimens) present from setigers 9 to 34. Limbate setae marginally finely serrated, pectinate setae heterodont with ca 15 teeth and bidentate compound falcigers (Fig. 2D) some with marginally serrated shafts. Acicula (Fig. 2B) paired, brown, darker in last few setigers, tapering to blunt tips and curved slightly dorsally. Subacicular hooks (Fig. 2C) black and bidentate, single in most setigers, rarely paired; starting setigers 17–27, through end of body.

Remarks.—The studied material showed great variation regarding the size of antennae, the beginning of subacicular hooks and the termination of branchiae. These variations may be due to size differences among specimens as demonstrated for a related species by

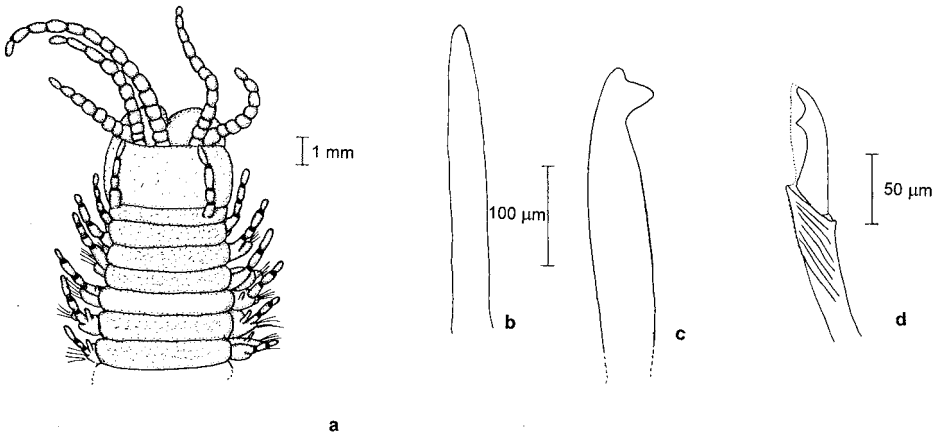

Figure 2. *Eunice thomasiana*; a, anterior region; b, acicula; c, subacicular hook; d, compound falciger, anterior setiger.

Fauchald (1991). The original description (Augener,1922) is very brief and lacks detail. Fauchald (1992a) redescribed *Eunice thomasiana* based on two syntypes, our material differs in some details such as maximum number of branchial filaments, the start of subacicular hooks and the separation between peristomial rings. These differences may be due to the low number of specimens used in the redescription.

Distribution on the Brazilian Coast.—Rio de Janeiro, Espírito Santo and Bahía between 37 and 67 m in calcareous algae bottoms

Eunice violaceomaculata Ehlers, 1887

Eunice violaceo-maculata Ehlers, 1887: 86–87, pl. 24: figs. 11,12, pl. 25: figs. 1–7; Fauchald, 1992a: 334–337

Material Examined.—sta. 37C, 1 spec.; sta. 31W, 1 spec.; sta. 29S, 1 spec.

Distribution on the Brazilian Coast.—Rio de Janeiro State from 60 to 150 m associated with calcareous algae.

Eunice cf. *websteri* Fauchald, 1969

Eunice websteri Fauchald, 1969: 12–14: fig. 6.
Eunice longicirrata Webster, 1884: 318–319, pl. 12: figs. 75-–80; Nonato and Luna, 1970: 80–81, figs. 60–62.
Leodice longicirrata Treadwell, 1921: 39–40, figs. 107–116, pl. 2: figs. 9–12.
?*Eunice biannulata* Rullier and Amoureux, 1979: 172 (in part).

Material Examined.—sta. 2C, 1 spec.; sta. 14C, 2 spec.; sta. 25W, 1 spec.; sta. 28W, 3 spec.; sta. 33VV, 1 spec.; sta. 35VV, 2 spec.

Description.—Only anterior fragments (2–4.5 mm) are available. Prostomium deeply incised. Antennae with cylindrical articulations. AIII with up to 20 articulations (10 on

one small specimen). Antennae, peristomial cirri and dorsal cirri with narrow brown band at the joints of the articulations. Articulations are indistinct in anteriormost dorsal cirri, absent in posterior. Dorsal cirri similar in length to branchial filaments. Peristomial cirri outreach first peristomial ring anteriorly. Mandibles serrated with 5 teeth (the 3 inner smaller), strongly calcified. Branchiae pectinate, present from setiger 4 to setiger 34–38, up to 5 filaments, first and last 6 pairs with single filament. Single subacicular hooks begin setiger 34–35.

Remarks.—The identification is doubtful since the material examined have branchiae from setiger 4, instead of 3, with a smaller number of filaments; subacicular hooks appearing anterior to those in Fauchald (1969) redescription. The start of the branchiae on setiger 4 and the small number of filaments resemble the conditions in *E. antillensis* Ehlers, 1887 and *E. articulata* Ehlers, 1887. However, *E. articulata* has very long dorsal cirri and short branchiae with stubby filaments through setiger 55. *E. antillensis* has the same distribution of branchiae and subacicular hooks as our material, but has acicula distally expanded in round tabs and dorsal cirri much longer than the branchial filaments. The specimens described from the northeastern Brazilian coast as *E. longicirrata* by Nonato and Luna (1970) and as *E. biannulata* (in part) by Rullier and Amoureux (1979) are considered as junior synonyms of *E. websteri*. These descriptions also presented some differences from Fauchald's (1969) redescription.

Distribution on the Brazilian Coast.—Rio de Janeiro, Espírito Santo, Bahía, Sergipe and Alagoas States from intertidal to 100 m in calcareous algae bottoms.

Palola brasiliensis new species
(Fig. 3A–F)

Material Examined.—sta. 10C, 3 spec.; sta. 11C, 3 spec.; sta. 15C, 4 spec.; sta. 17C, 2 spec.; sta. 21C, 1 spec.; sta. 21VV, 1 spec.; sta. 24C, 1 spec.; sta. 25C, 2 spec.; sta. 28C, 1 spec.; sta. 29C, 4 spec.; sta. 32D, 1 spec.; sta. 35C, 1 spec.; sta. 37C, 1 spec.; sta. 39D, 1 spec.; sta. 44C, 10 spec.; sta. 45C, 3 spec.; sta. 46C, 1 spec.; sta. 47C, 4 spec.

Description.—Holotype (IBUFRJ-0121) complete specimen 3.5 mm wide, 90 mm long, 259 setigers. Paratypes (IBUFRJ): 2.5 to 3.5 wide, 30 to 90 mm long. Prostomium smaller than peristomium (Fig. 3A), with shallow median sulcus. Eyes between AI and AII. Antennae wrinkled, arranged in a shallow horseshoe, AII and AIII close together, separated by a gap from AI. AI to peristomium base-setiger 1, AII to setiger 2–7, AIII to setiger 4–10. Peristomial cirri reach middle to front of first peristomial ring. Peristomial rings similar in size, separation distinct on all sides. Maxillae II with 4 teeth on the left and 3 on the right side. Branchiae with single filaments (one specimen with three filaments on one setiger); where best developed larger than notopodial cirri (Fig. 3B) shorter than half of the body width, starting on setiger 58–100 and finishing well before end of body, leaving last 21–172 setigers without branchiae. Ventral cirri from setigers 1–5 digitiform, from setiger 6–8 to setiger 60–87 bases of ventral cirri inflated (Fig. 3B) forming transverse ridges, tips tapering; posterior ventral cirri short and tapering. First notopodial cirri almost twice as long as second one. Notopodial cirri digitate, shorter posteriorly. Limbate setae nearly geniculate (Fig. 3C), tapering abruptly and marginally serrated. Compound falcigers distinctly bidentate (Figs. 3D,E) with marginally serrated shafts. Setae of anterior and median setigers proportionally larger with shafts less serrated than in posterior

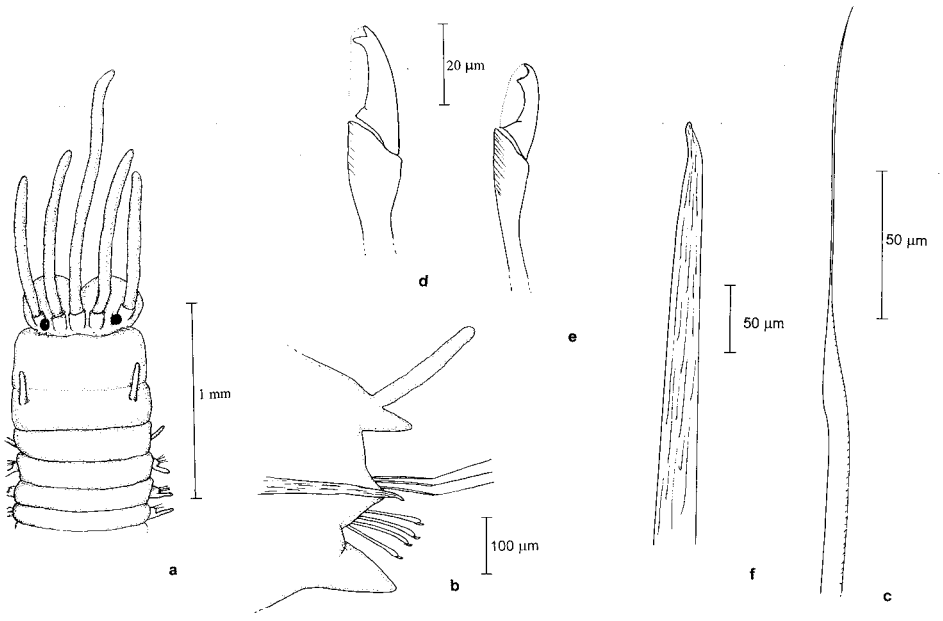

Figure 3. *Palola brasiliensis* sp. nov.: a, anterior region; b, median parapodium; c, limbate setae, anterior setiger; d, compound falciger, setiger 6; e, compound falciger setiger 188; f, acicula, setiger 88.

setigers. Compound spinigers and pseudocompound falcigers absent. Acicula single, tapering, distally bent in median setigers (Fig. 3F). Pygidium with two unequal pairs of cirri, the longer twice the shorter.

Remarks.—*Palola brasiliensis* sp. nov. is closely related to *P. viridis* Gray in Stair 1847. The differences between them include the peristomial width (greater than peristomium in *P. viridis*); maxillae II (*P. viridis* has 3 teeth on left and 2 right); inflated bases of ventral cirri (from setiger 15 to setiger 160–200 on *P. viridis*); median acicula (up to 3 acicula per parapodium on *P. viridis*); and pygidium rounded lobes on *P. viridis*.

Distribution on the Brazilian Coast.—Rio de Janeiro, Espírito Santo and Bahia States between 22 and 125 m in calcareous algae and mud bottoms.

Etymology.—The wide distribution of the species on the eastern Brazilian coast was the reason of its specific name.

Type locality.—Southern coast of Bahia (17°05′54″S; 36°45′08″W), 50 m.

Palola sp.

?*Eunice paloloides* Moore, 1904: 246–249, pl. 7, figs. 5–7.
?*Palola paloloides* Fauchald, 1992b: 1196–1198, figs. 8a–g.
?*Palola siciliensis* Nonato and Luna, 1970: 86–87.

Material Examined.—sta. 27S, 2 spec.; sta. 32S, 2 spec.; sta. 43S, 1 spec.

Description.—Only anterior fragments, 3 to 3.5 mm wide, 75 to 80 mm long, up to 224 setigers available. Prostomium shorter than peristomium which is distinctly inflated. AI to the middle of first peristomial ring, AII and AIII to second peristomial ring, AIII slightly

longer than AII. Left maxillae II with 3 teeth, right with 2 large teeth and a secondary distal one. Ventral cirri digitiform; becoming basely inflated after setiger 9. First dorsal cirrus distinctly longer (less than twice) than on next setigers. Branchiae with one filament, shorter than one-half of body width from setigers 115(122) to last setigers present. Limbate setae curved, smooth, longer than falcigers. Compound falcigers similar throughout fragment, ratio between width/length of blades less than 0.25. Acicula black or dark brown, usually paired, few setigers with three acicula.

Remarks.—The species could not be completely identified due to the absence of complete specimens. It presents many characters common to *P. paloloides* including an accessory distal tooth in right Mx II, a character used by Hartman (1944) to distinguish *P. paloloides* from *P. siciliensis*. *P. paloloides* differs from our material in having longer branchial filaments and single acicula in anterior setigers. *P. siciliensis* was the only species in the genus previously reported from the Brazilian coast (Nonato and Luna, 1970; Rullier and Amoureux, 1979). But, as pointed out by Fauchald (1992b), in a review of the types of *Palola*, this species has been reported for all warm-water areas around the world and it is likely that these reports may represent other species. Furthermore, in the same review, he observed that the syntypes of *P. siciliensis* were devoided of eyes, a character presented in several reports of the species (Fauvel, 1923; Hartman, 1944; Day, 1967; Nonato and Luna, 1970).

Distribution on the Brazilian Coast.—Rio de Janeiro State in bottoms of sand and calcareous fragments at 48 m.

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